Docket 85184LMB
Customer No. 01333

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE
BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

In re Application of

Peter T. Aylward, et al

MATERIALS AND METHOD FOR BACKPRINTING IMAGING MEDIA

Serial No. 10/827,398

Filed April 19, 2004

Group Art Unit: 1752

Examiner: Amanda C. Walke

I hereby certify that this correspondence is being deposited today with the United States Postal Service as first class mail in an envelope addressed to Commissioner For Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Christine Tolhurst
Christine Tolhurst

September 12, 2006
Date

Mail Stop APPEAL BRIEF-PATENTS
Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Sir:

APPEAL BRIEF TRANSMITTAL

Enclosed herewith is Appellants' Appeal Brief for the above-identified application.

The Commissioner is hereby authorized to charge the Appeal Brief filing fee to Eastman Kodak Company Deposit Account 05-0225. A duplicate copy of this letter is enclosed.

Respectfully submitted,

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If the Examiner is unable to reach the Applicant(s) Attorney at the telephone number provided, the Examiner is requested to communicate with Eastman Kodak Company Patent Operations at (585) 477-4656.

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APPEAL BRIEF PURSUANT TO 37 C.F.R. 41.37 and 35 U.S.C. 134

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APPELLANT'S BRIEF ON APPEAL

Appellants hereby appeal to the Board of Patent Appeals and Interferences from the Examiner's Final Rejection of claims 1-26 which was contained in the Office Action mailed 04/12/2006.

A timely Notice of Appeal was filed 07/12/2006.

Real Party In Interest

As indicated above in the caption of the Brief, the Eastman Kodak Company is the real party in interest.

Related Appeals And Interferences

No appeals or interferences are known which will directly affect or be directly affected by or have bearing on the Board's decision in the pending appeal.

Status Of The Claims

Claims 1-26 are pending in the application.

Claims 1-26 are being appealed.

Appendix I provides a clean, double-spaced copy of the claims on appeal.

Status Of Amendments

A Notice of Appeal was filed on July 12, 2006, subsequent to the Final Rejection not allowing the claims.

Summary of Claimed Subject Matter

The present invention relates to a method for placing indicia on the non-image side of a support for an imaging element (pg. 12, lines 6 – 8; pg. 26, line 13 – pg. 60, line 24) comprising providing a support (pg. 11, line 14 – pg. 25, line 26), wherein said imaging support comprises an image side (pg. 1, line 11; pg. 4, lines 18-19; pg. 62, line 11 (Sample 2)) having at least one imaging layer (pg. 25, lines 14-16) and a non-image side (pg. 4, lines 19-22); contacting said non-image side of said support with a thermal transfer dye donating sheet (pg. 6, lines 22 – 29; pg. 7, line – pg. 12, line 5) ; applying energy in a pattern (pg. 6, lines 14-19) to said thermal transfer dye donating sheet; and transferring said pattern (pg. 5, lines 6-10) to said non-image side of said support to form indicia (pg. 5, line 21 – pg. 6, line 3).

Grounds of Rejection to be Reviewed on Appeal

The following issues are presented for review by the Board of Patent Appeals and Interferences:

1. The rejection of Claims 1-26 under 35 U.S.C. 103(a) as being obvious over Campbell (5,612,283) in view of Dalvey et al (6,753,050 or 6,884,311).

Arguments

Rejection Of Claims 1-26 Under 35 U.S.C. §103(a):

The Examiner has rejected Claims 1-26 under 35 U.S.C. 103(a) as being unpatentable over Campbell (5,612,283) in view of Dalvey et al (6,753,050 or 6,884,311), stating:

> "Campbell discloses a dye-receiving element for thermal dye transfer comprising a support having on the front side thereof, in order, a biaxially-oriented composite film laminated thereto and a dye image-receiving layer, the composite film comprising a microvoided thermoplastic core layer and at least one substantially void-free thermoplastic surface layer, the support having on the back side thereof a biaxially-oriented transparent film laminated thereto which has a light transmission of at least 70%, the ratio of thickness of the transparent film to the composite film varies from about 0.45 to about 0.75. Due to their relatively low cost and good appearance, composite films are generally used and referred to in the trade as "packaging films." The low specific gravity of microvoided packaging films (preferably between 0.3-0.7 g/cm.sup.3) produces dye-receivers that are very conformable and results in low mottle-index values of thermal prints. These microvoided packaging films also are very insulating and produce dye-receiver prints of high dye density at low energy levels. The nonvoided skin produces receivers of high gloss and helps to promote good contact between the dye-receiving layer and the dye-donor film. This also enhances print uniformity and efficient dye transfer. In products made by a typical extrusion lamination process, back printing labels, watermarks and logos are applied directly to the backside of the paper support stock with inks applied by a gravure printing process. It would be desirable to have such

"back printing" indicia be visible, however, the reference is not specific as to the method of printing the indicia.

Dalvey et al disclose an image transfer sheet comprises a release layer and a polymer layer. One or more of the release layer and the polymer layer comprise titanium oxide or other white pigment. One embodiment of the present invention includes a method for transferring an image to a colored substrate. The method comprises providing an image transfer sheet comprising a release layer and an image-imparting layer that comprises a polymer. The image imparting layer comprises titanium oxide or another white pigment or luminescent pigment. The image transfer sheet is contacted to the colored substrate. Heat is applied to the image transfer sheet so that an image is transferred from the image transfer sheet to the colored substrate. The image transferred comprises a substantially white or luminescent background and indicia. Another embodiment of the present invention includes an image transfer sheet. The image transfer sheet comprises a polymer. The polymer comprises titanium oxide or other white pigment or luminescent pigment. One other embodiment of the present invention includes a method for making an image transfer sheet. The method comprises providing an ink receptive polymer and impregnating the polymer with titanium oxide or other white pigment or luminescent pigment. An image is imparted to the polymer. With the method of the present invention, a sheet such as is shown at 104a, is prepared having a substrate layer 302 that comprises a polymeric material such as polypropylene, paper, a polyester film, or other film or films having a matte or glossy finish, such as is shown in FIG. 3a. The substrate layer 302 may be coated with clay on one side or both sides. The substrate layer may be resin coated or may be free of coating if the substrate is smooth enough. The resin coating acts as a release coating 306. The coating weight typically ranges from 40 g/square meter to 250 g/square meter. In one embodiment, the range is 60 to 130 g/square meters. In one embodiment, overlaying the substrate 302 or base paper is a silicon coating 304. Other release coatings such as fluorocarbon, urethane, or acrylic base polymer are usable in the image transfer device of the present invention. 0110 other release coating is a silicone coating. The silicone coating has a release value of about 10 to 2500 g/inch, using a Tesa Tape 7375 tmi, 90 degree angle, 1 inch tape, 12 inches per minute. These other release

coatings are, for some embodiments, impregnated with titanium oxide or other white pigments in a concentration of about 20% by weight. In other embodiments of the image transfer sheet, a changeable color was added to one or more of the layers of the image transfer sheet. The color-changeable material transferred utilized a material such as a temperature sensitive pigmented chemical or light changeable material, a neon light which glows in the dark for over 50 hours and was a phosphorescent pigment, a zinc-oxide pigment or a light sensitive colorant. A concentrated batch of one or more of the materials of polyethylene, polyester, EVA, EAA, polystyrene, polyamide or MEAA which was a Nucrel-like material was prepared. The color-changeable material was added to the layer material up to a concentration of 100% by weight with 50% by weight being typical. The color-changeable material technologies changed the image transfer sheet from colorless to one or more of yellow, orange, red, rose, red, violet, magenta, black, brown, mustard, taupe, green or blue. The color-changeable material changed the image transfer sheet color from yellow to green or from pink to purple. In particular, sunlight or UV light induced the color change.

Given the teachings of the references, it would have been obvious to one of ordinary skill in the art to prepare the material of Campbell choosing to employ the improved method of forming an indicia taught by Dalvey et al with reasonable expectation of achieving a support having good light transmission."

In the Final Rejection mailed 04/12/2006, the Examiner continues that:

"Applicant's arguments filed 10/3/2005 have been fully considered but they are not persuasive. Applicant has argued that the references relied upon in the rejection of record may not be combined because the Dalvey reference does not teach a dye transfer. The Examiner respectfully disagrees. The Dalvey reference teaches that pigments and coloring agents (that are known and in the background dyes and dye precursors are mentioned as typical colorants), as well as dye fixing agents are employed in the layer. Heat is applied and the colored image(s) are transferred. Given that the layer may comprise any known coloring agents/ pigments, and that dye fixers are contemplated for use in the layer, as well as dyes and dye precursors being taught as conventional colorants, the examiner

takes the position that the layer does in fact transfer a dye and therefore teaches the instantly claimed method of transferring indicia to a support, or non-image side of the support of Campbell et al."

Campbell discloses a dye-receiving element for thermal dye transfer comprising a support having on the front side thereof, in order, a biaxially-oriented composite film laminated thereto and a dye image-receiving layer, the composite film comprising a microvoided thermoplastic core layer and at least one substantially void-free thermoplastic surface layer, the support having on the back side thereof a biaxially-oriented transparent film laminated thereto which has a light transmission of at least 70%, the ratio of thickness of the transparent film to the composite film being from about 0.45 to about 0.75. Campbell, col.2, lines 17-21, indicates "In products made by a typical extrusion lamination process, back printing labels, water marks and logos are applied directly to the back side of the paper support stock with inks applied by a gravure printing process. It would be desirable to have such "back printing" indicia be visible."

Dalvey '050 discloses an image transfer sheet with an image imparting layer and an adhesive layer to permit transfer of an image to a substrate without substantial application of heat. The image to be transferred has been pre-formed and is either pre-printed onto the polymer layer or has been pre-printed onto a second ink receiving layer. (col. 6, lines 34-37)

Dalvey '311 discloses an image transfer sheet having a release layer and a polymer layer in which one or more of the release layer and the polymer layer comprise titanium oxide or other white pigment for use in transferring an image onto a colored base and to an article comprising a dark base and an image with a light background on the base. Again a preformed image is described, not the use of a thermal transfer donating sheet which produces an image directly on a substrate in the form of the pattern of energy applied to the donating sheet.

The present invention relates to a method for placing indicia on the non-image side of a support for an imaging element comprising providing a support, which has an image side having at least one imaging layer and a non-image side, contacting the non-image side of the support with a thermal transfer donating sheet, applying energy in a pattern to the thermal transfer dye donating sheet, and transferring the dye from the dye donating sheet to the non-image side of the support in the energy pattern to form indicia.

To establish a prima facia case of obviousness requires, first, there must be some suggestion or motivation, either in the references themselves, or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to

combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art references (or references when combines) must teach or suggest all the claim limitations. The teaching or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in the applicant's disclosure. *In re Rouffet*, 149 F.3d 1350, 1357, 47 USPQ2d 1453, 1457-58 (Fed. Cir. 1998).

Campbell, col.2, lines 17-21, indicates back printing labels, water marks and logos are applied directly to the back side of the paper support stock with inks applied by a gravure printing process, but fails to mention back printing via a thermal transfer donating sheet which, upon patterned application of energy, provides dye to a substrate which dye then forms a pattern on the substrate. Campbell mentions thermal printing, but only to impart an image to the front-side dye receiving element, not the non-image side of the support. (col. 5, lines 29-31; Abstract ("*A dye-receiving element for thermal dye transfer comprising a support having on the front side thereof, in order, a biaxially-oriented composite film laminated thereto and a dye image-receiving layer,*")) Dalvey '050 indicates that the receiver and other layers are actually transferred to the substrate, not just dye in the shape of the pattern of energy applied to the thermal transfer donating sheet. Also, the thermal transfer donating sheet of the present invention contains no image or indicia. See Dalvey '050, col. 5, line 60 – col. 6, line 49 ("*To make the image transfer sheet, the release layer and polymer layer may be separately extruded onto the base paper layer or may be co-extruded. ... The polymer is co-extruded against the release layer 12. The polymer layer 18 is coated with an ink-receiving layer 20. The ink-receiving layer is, for some embodiments, printed with indicia using ink from an ink-jet printer. For other embodiments, indicia are applied with a laser printer or by thermal transfer application. For other embodiments, the polymer layer 18 is not coated with an ink receiving layer. A second ink-receiving layer is optionally coated over the first receiving layer, depending upon the type of final image desired. ...The image transfer sheet is applied to a substrate by separating the polymer and ink-receiving layers and adhesive layer from the base paper and release layer. The adhesive layer contacts the substrate and adheres the polymer and ink-receiving layers to the substrate. ...To transfer an image from the image transfer sheet of the present invention 10 to a substrate, the base layer 12 is peeled away from the rest of the sheet. For embodiments such as is shown in FIG. 1, the base layer is peeled away at the release layer 14. For embodiments such as is shown in FIG. 2, the base layer 12 is peeled at the resin or polymer layer 13. ... Separation of the base layer 12 exposes the adhesive layer 16. Once separated and exposed, the adhesive layer 16 is positioned to contact the substrate. Pressure is applied*

as needed to adhere the image to the substrate. The image has, as discussed, been pre-printed onto the polymer layer 20 and, for some embodiments, has been pre-printed onto a second ink receiving layer. For embodiments with no adhesive, transfer occurs by use of an iron that applies heat to the substrate receiving the image and the image. A heat press is also usable.") Dalvey '311 teaches the formation of an image on a sheet, followed by transfer of the pre-formed image to a substrate. See Fig. 1. Dalvey '311 indicates that the image is present on the image transfer device and is then transferred to the substrate. (See col. 3, lines 17-19: "*As used herein, the term "indicia" refers to an image disposed on the image transfer device of the present invention in conjunction with a substantially white background. Indicia include letters, figures, photo-derived images and video-derived images.*" see also col. 9, lines 1-16). Example 1 of Dalvey, col. 9, lines 51-64, indicates, "*The EAA layer is coated with ink jet receptive layers and then printed on an ink jet printer. The print is then removed from the release layer to expose the print. The exposed print is applied against fabric and covered by release paper, wherein the release side contacts the printed side. The printed image is transferred by heat application with pressure*". Again, the image is applied to the transfer sheet, then to the support, not by direct transfer of dye which results in the image / pattern formation directly on the support. Claim 1 of US 6884311 also states that the image-imparting layer "comprises a polymer that includes indicia. None of the cited references suggest, teach or disclose a thermal transfer donating sheet to which a pattern of energy is applied, resulting in the transfer of dye from the dye donating sheet to the non-image side of the support in the energy pattern to form indicia. Therefore, the references fail to provide any motivation for the present thermal transfer method.

Neither do Campbell or Dalvey provide a likelihood of success for the use of a thermal transfer donating sheet to which a pattern of energy is applied, resulting in the transfer of dye from the dye donating sheet to the non-image side of the support in the energy pattern to form indicia. At best, the combination of the references would provide a gravure printed backside of a support or a gravure printed transfer sheet used to then transfer the gravure-printed image to the backside of a support.

In addition, neither Campbell or the Dalvey references mention placing indicia on the non-image side of a support for an imaging element comprising via contacting the non-image side of a support with a thermal transfer dye donating sheet; applying energy in a pattern to the thermal transfer dye donating sheet to transferring dye in a pattern to the support to form indicia.

Although the Dalvey reference teaches that pigments and coloring agents and dye fixing agents are employed in the layer, that heat is applied and the colored image(s) are

transferred, Dalvey does not teach the thermal transfer dye donating sheets presently claimed. Thermal transfer dye donating sheet are well known to those of ordinary skill in the art, as illustrated by referring to U.S. Pat. Nos. 5,403,811 (Abstract), 5,262,377 (Abstract), 5,242,887 (Field of the Invention, col. 1), 5,073,533 (Abstract), 5,059,580 (col. 1, lines 45-46), 6,458,194 (col. 1, line 67-col. 2, line 1), and 4,990,486 (col. 1, lines 27-28), which describe thermal transfer dye donating sheets and the materials used therein. These references clearly indicate that pigments, such as titanium dioxide used in the Dalvey references, is not a thermal transfer dye and is not utilized in thermal transfer dye donating sheets, but in the dye receiving layer or the element support. See U.S. Pat. Nos. 5,403,811 (col. 92, lines 41-47), 5,262,377 (col. 116, lines 5-13), 5,242,887 (col. 8, line 65 – col. 9, line 4; Preparation of Thermal Transfer Image-Receiving Material, col. 16, lines 19), 5,073,533 (col. 3, lines 53-60; col. 13, lines 1-7), 5,059,580 (col. 4, lines 13-20; col. 5, lines 37-66), 6,458,194 (col. 25, lines 28-40), and 4,990,486 (col. 6, lines 34-38). In addition, in thermal transfer dye donating sheets, the dye transfers into the receiver, while any polymeric binder material does not transfer. See U.S. Pat. Nos. 5,403,811 (col. 1, lines 37-51), 5,262,377 (col. 1, lines 35-49), 5,242,887 (col. 1, lines 31-44), 5,073,533 (col. 1, lines 30-38), 5,059,580 (col. 1, lines 38-40), and 4,990,486 (col. 1, lines 30-40; see also col. 7, lines 47-49); see also U.S. Pat. No. 4,839,224, col.1, lines 45-50 ("The term sublimation transfer is used to refer to systems in which essentially only the colorant is transferred by sublimation or vaporization to a receptor sheet. This type of process leaves behind in the donor sheet any binder which might have been used in the donor sheet."). However, according to Dalvey '050, col. 6, lines 12-30 and Dalvey '311, col. 9, lines 29-43, the binder also transfers. This again illustrates that the Dalvey references do not teach thermal transfer dye donating sheets.

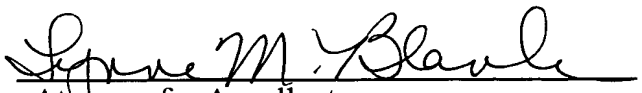
Summary

In summary, neither Campbell nor the Dalvey references provide the suggestion or motivation, either in combination or alone, to modify the references or to combine reference teachings to produce the method for placing indicia on the non-image side of a support for an imaging element using a thermal transfer dye donating sheet of the presently claimed invention, provide any reasonable expectation of success, and teach or suggest all the claim limitations. As a result, the Applicants believe that the present invention is not obvious in light of the references.

Conclusion

For the above reasons, Appellants respectfully request that the Board of Patent Appeals and Interferences reverse the rejection by the Examiner and mandate the allowance of Claims 1-26.

Respectfully submitted,



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Appendix I - Claims on Appeal

1. A method for placing indicia on the non-image side of a support for an imaging element comprising providing a support, wherein said imaging support comprises an image side having at least one imaging layer and a non-image side; contacting said non-image side of said support with a thermal transfer dye donating sheet; applying energy in a pattern to said thermal transfer dye donating sheet; and transferring said pattern to said non-image side of said support to form indicia.

2. The method of claim 1 wherein said thermal transfer dye donating sheet comprises at least one area containing dyes and at least one environmental protection laminate area.

3. The method of claim 2 wherein said environmental protection laminate area comprises ultraviolet absorbing materials.

4. The method of Claim 3 wherein said ultraviolet absorbing materials is at least one member selected from the group consisting of ultraviolet absorbing dyes, ultraviolet absorbing pigments, ZnO and TiO2.

5. The method of claim 2 wherein said environmental protection laminate area provides protection from photochemical materials.

6. The method of claim 5 wherein said photochemical material protection laminate area comprises at least one hydrophobic polymer.

7. The method of claim 6 wherein said hydrophobic polymer comprise at least one member selected from the group consisting of acrylate, acrylic, polystyrene, vinyl and copolymers thereof.

8. The method of Claim 6 wherein said hydrophobic polymer comprises a blend of polyvinyl acetal and polyvinyl butyral.

9. The method of Claim 5 wherein said photochemical material protection laminate area comprises colloid silica and UV absorbing material

10. The method of claim 2 wherein said environmental protection laminate area comprises abrasion protection materials.

11. The method of Claim 10 wherein said abrasion protection materials comprise at least one material selected from the group consisting of silicas, microbeads, slip agents and fluoropolymers.

12. The method of claim 1 wherein said imaging support comprises paper.

13. The method of claim 12 wherein said paper comprises resin coated paper.

14. The method of claim 12 wherein said paper further comprises at least one biaxially oriented, voided sheet.

15. The method of claim 1 wherein said imaging support comprises a closed cell foam core sheet and adhered thereto an upper and lower polymer flange sheet, and wherein said closed cell foam core sheet comprises an expanded polymer and a blowing agent.

16. The method of claim 15 wherein at least one of said upper and lower polymer flange sheet comprises a biaxially oriented, voided sheet.

17. The method of claim 1 wherein said indicia comprise at least one member selected from the group consisting of letters, pictures, numbers, symbols, pattern and words.

18. The method of claim 1 wherein said energy comprises heat energy.

19. The method of claim 1 wherein said energy comprises laser energy.

20. The method of claim 1 wherein said imaging layer comprises photosensitive silver halide.

21. The method of claim 1 wherein said imaging layer comprises an inkjet imaging layer.

22. The method of claim 1 wherein said imaging layer comprises a thermal imaging layer.

23. The method of claim 1 wherein said imaging layer comprises an electrophotographic imaging layer.

24. The method of claim 1 wherein said support further comprises functional layers.

25. The method of claim 24 wherein said functional layers comprise at least one member selected from the group consisting of antistatic layer, release layer, friction control layer, dye receiving layer.

26. The method of claim 1 further comprising applying an environmental protection laminate layer to said non-image side of said support.

Appendix II - Evidence

None

Appendix III – Related Proceedings

None